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1: [Acta Vet Scand. 1990;31\(2\):193-206.](#)



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Some effects of gram-negative bacterial endotoxin and its importance as a contaminator of biological preparations.

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The purpose of this study was to establish a model which can be used to examine the biological response to *Salmonella typhimurium* endotoxin in both anaesthetized and unanaesthetized rabbits, and then compare this response to that of rabbits injected with an endotoxin-contaminated biological preparation. The parameters used to evaluate the biological response included total white blood cell and differential counts, 15-ketodihydro-PGF2 alpha concentration, and rectal temperature. Unanaesthetized groups of rabbits received 1000, 100, 10, or 1 ng/kg of the endotoxin via intravenous injection (i.v.); the anaesthetized group of rabbits received 100 ng/kg endotoxin i.v. (anaesthesia induced with Hypnorm). In addition, groups of rabbits were treated under anaesthesia with Pharmacia-Chiron's recombinant human Cu/Zn superoxide dismutase (SOD) (10 mg/kg body weight = 1.6 endotoxin units (EU)/kg) or Grunenthal's bovine SOD (two doses: 10 mg/kg = 400 EU/kg, or 50 mg/kg = 2000 EU/kg). Results demonstrated that at the lower doses of endotoxin (10 and 1 ng/kg) and r-hSOD (10 mg/kg), no leukopenia was observed. There was however a slight shift in the leukocyte population so that polymorphonucleocytes increased and monocytes decreased in number. Rabbits treated with higher doses of endotoxin (1000 and 100 ng/kg) showed many of the common signs of endotoxemia, including leukopenia, increased prostaglandin metabolite levels, and increased body temperature, as did the rabbits treated with endotoxin-contaminated bSOD. There was a definite dose-dependency, with the higher dose of bSOD giving a more marked rise in all parameters. These findings indicate that use of this or other endotoxin-contaminated biological preparations in live-animal experiments could produce erratic, and therefore unreliable, results.

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